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L1 2 ADVANCED MATERIALS/RWK (S) 14/RVL (S) 19/RPG

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L1 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2008 ACS on STN  
ACCESSION NUMBER: 2007:648065 CAPLUS <<LOGINID::20080422>>  
TITLE: Preparation of porous carbon particle with shell/core  
structure  
AUTHOR(S): Jiang, Y. B.; Wei, L. H.; Yu, Y. Z.; Zhao, T.  
CORPORATE SOURCE: Laboratory of Advanced Polymer Materials, Institute of  
Chemistry, Beijing National Laboratory for Molecular  
Sciences, Beijing, 100080, Peop. Rep. China  
SOURCE: eXPRESS Polymer Letters (2007), 1(5), 292-298  
CODEN: PLOEAK; ISSN: 1788-618X  
URL: <http://www.expresspolymlett.com/letolt.php?file=EPL-0000214&ni=1>  
PUBLISHER: Budapest University of Technology and Economics, Dep.  
of Polymer Engineering  
DOCUMENT TYPE: Journal; (online computer file)  
LANGUAGE: English  
AB Porous carbon particles with a shell/core structure have been prepared  
successfully by controlled precipitation of the polymer from droplets of  
oil-in-water emulsion, followed by curing and carbonization. The droplets  
of the oil phase are composed of phenolic resin (PFR), a good solvent (Et  
acetate) and porogen (Poly(Me methacrylate), PMMA). The microstructure  
was characterized in detail by SEM (SEM), transmission electron microscopy  
(TEM), nitrogen adsorption, and thermo gravimetric anal. (TGA). The  
obtained carbon particles have a capsular structure with a microporous  
carbon shell and a mesoporous carbon core. The BET surface area and  
porous volume are calculated to be 499 m<sup>2</sup> g<sup>-1</sup> and 0.56 cm<sup>3</sup> g<sup>-1</sup>, resp. The  
effects of the amount of porogen (PMMA), co-solvent (acetone) and surfactant  
on the resultant structure were studied in detail.  
REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2008 ACS on STN  
ACCESSION NUMBER: 2005:122773 CAPLUS <<LOGINID::20080422>>  
DOCUMENT NUMBER: 142:201633  
TITLE: HCMS carbon capsule, electrocatalysts for fuel cell  
supported by HCMS carbon capsule, and method of  
preparing the same  
INVENTOR(S): Yu, Jong Sung; Chai, Geun Seok; Yoon, Suk Bon  
PATENT ASSIGNEE(S): Hannam University, S. Korea  
SOURCE: U.S. Pat. Appl. Publ., 14 pp.  
CODEN: USXFCO  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20050032635	A1	20050210	US 2004-912043	20040806
US 7157402	B2	20070102		
KR 2005015492	A	20050221	KR 2003-54337	20030806

PRIORITY APPLN. INFO.:

AB The present invention provides a bimodal porous carbon capsule with a hollow core and a mesoporous shell structure (HCMS), which can be employed as an electrocatalyst support for a fuel cell; electrocatalysts for the fuel cell using the bimodal porous carbon capsule, and a method of preparing the same. The electrocatalyst according to the present invention has higher catalysis activity as compared with the Pt-Ru or Pt catalyst supported by the conventional carbon black, so that the performance of the fuel cell is enhanced, and it can be easily prepared in an aqueous solution state.

According to the present invention, the porous carbon support employed as the support for the catalyst has excellent conductivity and a high surface area,

so that the loaded catalyst can be prepared with a smaller amount than that of the conventional carbon black. Further, metal particles having an extremely fine size of 2 to 3 nm are uniformly distributed on the support, so that the area of an active site at which catalysis reaction is performed is increased, thereby increasing the catalyst activity with respect to the oxidation reaction of the fuel such as methanol, ethanol, hydrogen, etc. Also, a fine pore of a porous carbon support secures a fuel dispersing passage, so that the fuel including alc. such as methanol, ethanol or the like, hydrogen, etc. can be easily transferred and dispersed, thereby efficiently performing its oxidation-reduction reaction. However, an air electrode can efficiently function as the catalyst due to the same principle.

REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT